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EXAMINER	
SMITH, JOSHUA Y	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,436	UGA ET AL.	
	Examiner	Art Unit	
	JOSHUA SMITH	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12-19,21 and 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-19,21 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed 05/27/2008 has been entered.

- **Claims 1-10, 12-19, 21 and 22 are pending.**
- **Claims 11 and 20 are cancelled.**
- **Claims 1-10, 12-19, 21 and 22 stand rejected.**

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamichi et al. (Pub. No.: US 2002/0085498 A1), hereafter referred to as Nakamichi.

In regards to Claim 12, Nakamichi teaches in paragraphs [0050] and [0053] through [0055], and in FIG. 2, Sheet 2 of 12, a input-side router (item 11S, FIG. 2) containing a link state database (item 32a, FIG. 2) and a processing unit (item 30, FIG. 2) involved in the transmission and reception of packets, and in the generation, transmission and reception of opaque LSAs of the OSPF protocol (a link state database search unit provided in an interface that processes a packet input via an input channel, provided in a packet transfer device, and a collecting unit that collects received information using a control packet of a routing protocol).

Nakamichi also teaches in paragraphs [0141] and [0142], and in FIG. 11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB

structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position, but if an opaque LSA is not up-to-date, the received opaque LSA is discarded (step item S112, FIG. 11) and is not inserted into the database region (a unit that stores at least a portion of items in a received information collected, and a unit compares stored information and information of newly received information collected to determine whether the newly received information is new or old).

In regards to Claims 13-15, Nakamichi teaches in paragraphs [0050] and [0053] through [0055], and in FIG. 2, Sheet 2 of 12, a input-side router (item 11S, FIG. 2) containing a link state database (item 32a, FIG. 2) and a processing unit (item 30, FIG. 2) involved in the transmission and reception of packets, and in the generation, transmission and reception of opaque LSAs of the OSPF protocol (a newly arrived packet containing newly received information, a comparing unit).

Nakamichi also teaches in paragraphs [0141] and [0142], and in FIG. 11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position, but if an opaque LSA is not up-to-date, the received opaque LSA is discarded (step item S112, FIG. 11) and is not inserted into the database region (newly received information is newer than information stored based on a decision made

by a comparing unit, discarding newly arrived control packet containing newly arrived information when the information is older than the information stored).

Nakamichi also teaches in paragraphs [0050] and [0051], each router exchanges information of each LSP in each link using opaque LSA of OSPF, and each router can propagate the opaque LSA(s), and, in paragraph [0111], and in FIG. 7, Sheet 7 of 12, after a database update process (step item S30, FIG. 7), step item S32 (FIG. 7) occurs in which the received opaque LSA is transmitted (flooded) to all other links (transferring a newly arrived control packet containing newly received information to a routing device, or to a routing device to an LSDB search unit in another interface, and a unit stores information in a control packet that is transferred from another unit).

In regards to Claim 16, Nakamichi teaches in paragraphs [0050] and [0053] through [0055], and in FIG. 2, Sheet 2 of 12, an input-side router (item 11S, FIG. 2) containing a program stored in an internal memory, a link state database (item 32a, FIG. 2), and a processing unit (item 30, FIG. 2) involved in the transmission and reception of packets, and in the generation, transmission and reception of opaque LSAs of the OSPF protocol (a storage medium having a computer program used in a link state database search unit provided in an interface that processes a packet input via an input channel, provided in a packet transfer device, and a function that collects received information using a control packet of a routing protocol).

Nakamichi also teaches in paragraphs [0141] and [0142], and in FIG. 11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB

structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position, but if an opaque LSA is not up-to-date, the received opaque LSA is discarded (step item S112, FIG. 11) and is not inserted into the database region (a function that stores at least a portion of items in a received information collected, and a function that compares stored information and information of newly received information collected to determine whether the newly received information is new or old).

In regards to Claims 17-19, Nakamichi teaches in paragraphs [0050] and [0053] through [0055], and in FIG. 2, Sheet 2 of 12, containing a program stored in an internal memory, an input-side router (item 11S, FIG. 2) containing a link state database (item 32a, FIG. 2), and a processing unit (item 30, FIG. 2) involved in the transmission and reception of packets, and in the generation, transmission and reception of opaque LSAs of the OSPF protocol (a function and a newly arrived packet containing newly received information, a comparing function).

Nakamichi also teaches in paragraphs [0141] and [0142], and in FIG. 11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is

inserted into this position, but if an opaque LSA is not up-to-date, the received opaque LSA is discarded (step item S112, FIG. 11) and is not inserted into the database region (newly received information is newer than information stored based on a decision made by a comparing function, discarding newly arrived control packet containing newly arrived information when the information is older than the information stored).

Nakamichi also teaches in paragraphs [0050] and [0051], each router exchanges information of each LSP in each link using opaque LSA of OSPF, and each router can propagate the opaque LSA(s), and, in paragraph [0111], and in FIG. 7, Sheet 7 of 12, after a database update process (step item S30, FIG. 7), step item S32 (FIG. 7) occurs in which the received opaque LSA is transmitted (flooded) to all other links (transferring a newly arrived control packet containing newly received information to a routing device, or to a routing device to an LSDB search unit in another interface, and a function stores information in a control packet that is transferred from another function).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basu et al. (Pub. No.: US 2004/0100950 A1) in view of Nakamichi et al. (Pub. No.: US 2002/0085498 A1) and Hassell et al. (Patent No.: US 6,208,650 B1), hereafter referred to as Basu, Nakamichi, and Hassell, respectively.

In regards to Claim 1, Basu teaches in paragraphs [0028] and [0029], and in FIG. 1, Sheet 1 of 10, a TCAM (item 15, FIG. 1) and an SRAM (item 16, FIG. 1) (a ternary content addressable memory (TCAM), an external memory).

Basu also teaches in paragraphs [0004], [0022], [0023], [0028], and [0029], and in FIG. 1, Sheet 1 of 10, implementation of TCAMs for flow classification, where TCAMs are provided hashing bits and destination address of a packet header from a packet (a unit that classifies items in information that is received, and a packet is sent according to a destination address, a packet that is input via an input channel).

Basu also teaches in paragraphs [0028] and [0029], and in FIG. 1, Sheet 1 of 10, TCAM (item 15, FIG. 1) contains sub-table ID information based on hashing bits of packet headers from incoming packets, and a resulting match from TCAM may then be used to index in SRAM (item 16, FIG. 1) containing "next hop" information for use in routing a given data packet (a unit that stores an item that uniquely identifies information among classified items in a TCAM and stores another item to an external memory, and a next hop to which a packet is to be sent).

Basu also teaches in paragraphs [0006] through [0008], a partitioning algorithm employed to segment a routing trie into a plurality of partitions for use with a two-stage lookup process, and any node in a routing trie that is in a routing table (a routing table generating unit that generates a routing table).

Basu fails to teach storing the rest of the items to an external memory, and a unit that stores an item that uniquely identifies information among items in a memory and stores the rest of items that do not uniquely identify information among items to an external memory. Nakamichi teaches storing the rest of the items to an external memory, and Hassell teaches a unit that stores an item that uniquely identifies information among items in a memory and stores the rest of items that do not uniquely identify information among items to an external memory

In the same field of endeavor, Nakamichi teaches in paragraphs [0054] and [0059], and in FIG. 3, Sheet 3 of 12, a link state database that is a database defined by the OSPF protocol and stores link states, and an opaque LSA database that is a database storing the opaque LSAs (a unit stores an item in a memory and stores the rest of the items to an external memory). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Nakamichi with the invention of Basu since Nakamichi provides a system where link states and opaque LSAs are stored in databases for use in an environment implementing the OSPF protocol, and such databases for OSPF can be used in the system of Basu to populate and update routing tables and allow the system of Basu to be compatible with and to be enhanced with OSPF technologies and operate in OSPF environments and networks.

In the same field of endeavor, Hassell teaches in column 6, lines 19-21 and 53-62, and in FIG. 3 and FIG. 4, an external memory 70 (FIG. 3 and FIG. 4), and frame payload data (not headers) is stored in external memory buffers, and an input processing block 110 (FIG. 4) receives an HDLC frame signal 111 (FIG. 4), where an HDLC header is checked and removed, processes a frame relay header 113 (FIG. 4), and stored a frame relay payload in external memory 70 (FIG. 4) though a memory management block 130 (FIG. 4), and a pointer to a frame record in a FBD table 140 (FIG. 4) is placed in an input queue 151 (FIG. 4) in a queue memory 150 (FIG. 4) pointed to by an input queue pointer 114 (FIG. 4) (a unit that stores an item that uniquely identifies information among items in a memory and stores the rest of items that do not uniquely identify information among items to an external memory). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Hassell with the invention of Basu since Hassell provides a system in which headers and payloads are separated for separate processing and storage, providing a system in which the system of Basu may operate within that separates payload portions of a packet that the system of Basu cannot process and stores it elsewhere, and forwards only header information that the system of Basu can process, providing efficient packet storage and processing.

In regards to Claim 2, as discussed in the rejection of Claim 1, Basu teaches classified items and external memory. Basu further teaches in paragraphs [0028] and [0029], and in FIG. 1, Sheet 1 of 10, a bit-selection logic module (item 11, FIG. 1),

extract hashing bits from an incoming packet header, where the hashing bits are used as a sub-table ID fro use in indexing to an appropriate bucket in a TCAM (item 15, FIG. 1) (searching information stored in a TCAM using, as a search key, an item that uniquely identifies information, and an item uniquely identifying information that has been stored in a TCAM match in a search).

Basu fails to teach a unit that searches new information prior to storing it, and a unit initiates a storing process when an item that uniquely identifies the newly received information and an item that uniquely identifies the information that has been stored do not match in a search, and a unit that determines whether a newly received information is older than corresponding information stored that corresponds to an item that uniquely identifies a newly received information. Nakamichi further teaches these limitations.

Nakamichi further teaches in paragraphs [0139] through [0141], and in FIG. 11, Sheet 11 of 12, in step item S108 (FIG. 11), in step item S108 (FIG. 11), it is determined whether or not there is an OLDB structure which agrees with the IP address of a router that transmitted the received opaque, and the OLDB is inserted in the database if there is no coincident OLDB structure (step item S118, IFG. 11) (a unit searches new information prior to storing it, and a unit initiates a storing process when an item that uniquely identifies the newly received information and an item that uniquely identifies the information that has been stored do not match in a search).

Nakamichi further teaches in paragraphs [0141] and [0142], and in FIG. 11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB

structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position (a unit that determines whether a newly received information is older than corresponding information stored that corresponds to an item that uniquely identifies a newly received information).

In regards to Claim 3, as discussed in the rejection of Claim 1, Basu teaches newly received information and an external memory. Basu fails to teach a unit that ignores newly received information when a comparing unit determines that it is as old or older than corresponding information stored, and when a comparing unit determines the newly received information is newer than a corresponding information stored, the corresponding information stored is updated with newly received information. Nakamichi further teaches these limitations.

Nakamichi further teaches in paragraphs [0141] and [0142], and in FIG. 11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position, but if an opaque LSA is not up-to-date, the received opaque LSA is discarded (step item S112, FIG. 11) and is not inserted into the database region (a unit that ignores newly received information when a comparing unit determines that it is as old or older than corresponding information stored, and when a comparing unit

determines the newly received information is newer than a corresponding information stored, the corresponding information stored is updated with newly received information). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Nakamichi with the invention of Basu since Nakamichi provides a system where link states and opaque LSAs are stored in databases for use in an environment implementing the OSPF protocol, and such databases for OSPF can be used in the system of Basu to populate and update routing tables and allow the system of Basu to be compatible with and to be enhanced with OSPF technologies and operate in OSPF environments and networks.

In regards to Claim 4, as discussed in the rejection of Claim 1, Basu teaches arrival of an arrived packet, using information stored in a TCAM, and information stored in an external memory based on a destination address. Basu fails to teach searching for a shortest path. Nakamichi further teaches these limitations.

Nakamichi further teaches in paragraph [0050], sharing traffic information related to Open Shortest Path First (OSPF) protocol (searching for a shortest path). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Nakamichi with the invention of Basu since Nakamichi provides a system where link states and opaque LSAs are stored in databases for use in an environment implementing the OSPF protocol, and such databases for OSPF can be used in the system of Basu to populate and update routing tables and allow the

system of Basu to be compatible with and to be enhanced with OSPF technologies and operate in OSPF environments and networks.

In regards to Claim 5, as discussed in the rejection of Claim 1, Basu teaches a unit determining a next hop to which an arrived packet is to be sent. Basu fails to teach searching for a shortest path. Nakamichi further teaches these limitations.

Nakamichi further teaches in paragraph [0050], sharing traffic information related to Open Shortest Path First (OSPF) protocol (searching for a shortest path). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Nakamichi with the invention of Basu since Nakamichi provides a system where link states and opaque LSAs are stored in databases for use in an environment implementing the OSPF protocol, and such databases for OSPF can be used in the system of Basu to populate and update routing tables and allow the system of Basu to be compatible with and to be enhanced with OSPF technologies and operate in OSPF environments and networks.

In regards to Claim 6, Basu teaches in paragraphs [0004], [0022], [0023], [0028], and [0029], and in FIG. 1, Sheet 1 of 10, implementation of TCAMs for flow classification, where TCAMs are provided hashing bits and destination address of a packet header from a packet (a function that classifies items in information that is received, and a packet is dent according to a destination address, a packet that is input via an input channel).

Basu also teaches in paragraphs [0028] and [0029], and in FIG. 1, Sheet 1 of 10, TCAM (item 15, FIG. 1) contains sub-table ID information based on hashing bits of packet headers from incoming packets, and a resulting match from TCAM may then be used to index in SRAM (item 16, FIG. 1) containing "next hop" information for use in routing a given data packet (a function that stores an item that uniquely identifies information among classified items in a TCAM and stores another item to an external memory, and a next hop to which a packet is to be sent).

Basu also teaches in paragraphs [0006] through [0008], a partitioning algorithm employed to segment a routing trie into a plurality of partitions for use with a two-stage lookup process, and any node in a routing trie that is in a routing table (a routing table generating function that generates a routing table).

Basu also teaches in paragraph [0037], program codes for implementing an algorithm (a program used), and in paragraph [0078], various processes may be substantially represented in computer readable medium and so executed by a computer or processor (a storage medium having a computer program).

Basu fails to teach storing the rest of the items to an external memory, and a unit stores that stores an item that uniquely identifies information among items in a memory and stores the rest of items that do not uniquely identify information among items to an external memory. Nakamichi teaches storing the rest of the items to an external memory, Hassell teaches a unit stores that stores an item that uniquely identifies information among items in a memory and stores the rest of items that do not uniquely identify information among items to an external memory.

In the same field of endeavor, Nakamichi teaches in paragraphs [0054] and [0059], and in FIG. 3, Sheet 3 of 12, a link state database that is a database defined by the OSPF protocol and stores link states, and an opaque LSA database that is a database storing the opaque LSAs (a unit stores an item in a memory and stores the rest of the items to an external memory). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Nakamichi with the invention of Basu since Nakamichi provides a system where link states and opaque LSAs are stored in databases for use in an environment implementing the OSPF protocol, and such databases for OSPF can be used in the system of Basu to populate and update routing tables and allow the system of Basu to be compatible with and to be enhanced with OSPF technologies and operate in OSPF environments and networks.

In the same field of endeavor, Hassell teaches in column 6, lines 19-21 and 53-62, and in FIG. 3 and FIG. 4, an external memory 70 (FIG. 3 and FIG. 4), and frame payload data (not headers) is stored in external memory buffers, and an input processing block 110 (FIG. 4) receives an HDLC frame signal 111 (FIG. 4), where an HDLC header is checked and removed, processes a frame relay header 113 (FIG. 4), and stored a frame relay payload in external memory 70 (FIG. 4) though a memory management block 130 (FIG. 4), and a pointer to a frame record in a FBD table 140 (FIG. 4) is placed in an input queue 151 (FIG. 4) in a queue memory 150 (FIG. 4) pointed to by an input queue pointer 114 (FIG. 4) (a unit stores that stores an item that uniquely identifies information among items in a memory and stores the rest of items that do not uniquely identify information among items to an external memory). It would

have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Hassell with the invention of Basu since Hassell provides a system in which headers and payloads are separated for separate processing and storage, providing a system in which the system of Basu may operate within that separates payload portions of a packet that the system of Basu cannot process and stores it elsewhere, and forwards only header information that the system of Basu can process, providing efficient packet storage and processing.

In regards to Claim 7, as discussed in the rejection of Claim 6, Basu teaches a program, classified items, and external memory. Basu further teaches in paragraphs [0028] and [0029], and in FIG. 1, Sheet 1 of 10, a bit-selection logic module (item 11, FIG. 1), extract hashing bits from an incoming packet header, where the hashing bits are used as a sub-table ID fro use in indexing to an appropriate bucket in a TCAM (item 15, FIG. 1) (searching information stored in a TCAM using, as a search key, an item that uniquely identifies information, and an item uniquely identifying information that has been stored in a TCAM match in a search).

Basu fails to teach a function that searches new information prior to storing it, and a unit initiates a storing process when an item that uniquely identifies the newly received information and an item that uniquely identifies the information that has been stored do not match in a search, and a function that determines whether a newly received information is older than corresponding information stored that corresponds to

an item that uniquely identifies a newly received information. Nakamichi further teaches these limitations.

Nakamichi further teaches in paragraphs [0139] through [0141], and in FIG. 11, Sheet 11 of 12, in step item S108 (FIG. 11), in step item S108 (FIG. 11), it is determined whether or not there is an OLDB structure which agrees with the IP address of a router that transmitted the received opaque, and the OLDB is inserted in the database if there is no coincident OLDB structure (step item S118, IFG. 11) (a function searches new information prior to storing it, and a function initiates a storing process when an item that uniquely identifies the newly received information and an item that uniquely identifies the information that has been stored do not match in a search).

Nakamichi further teaches in paragraphs [0141] and [0142], and in FIG. 11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position (a function that determines whether a newly received information is older than corresponding information stored that corresponds to an item that uniquely identifies a newly received information).

In regards to Claim 8, as discussed in the rejection of Claim 6, Basu teaches a program, newly received information, and an external memory. Basu fails to teach a function that ignores newly received information when a comparing unit determines that

it is as old or older than corresponding information stored, and when a comparing function determines the newly received information is newer than a corresponding information stored, the corresponding information stored is updated with newly received information. Nakamichi further teaches these limitations.

Nakamichi further teaches in paragraphs [0141] and [0142], and in FIG. 11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position, but if an opaque LSA is not up-to-date, the received opaque LSA is discarded (step item S112, FIG. 11) and is not inserted into the database region (a function that ignores newly received information when a comparing function determines that it is as old or older than corresponding information stored, and when a comparing function determines the newly received information is newer than a corresponding information stored, the corresponding information stored is updated with newly received information). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Nakamichi with the invention of Basu since Nakamichi provides a system where link states and opaque LSAs are stored in databases for use in an environment implementing the OSPF protocol, and such databases for OSPF can be used in the system of Basu to populate and update routing tables and allow the system of Basu to be compatible with and to be enhanced with OSPF technologies and operate in OSPF environments and networks.

In regards to Claim 9, as discussed in the rejection of Claim 6, Basu teaches arrival of an arrived packet, using information stored in a TCAM, and information stored in an external memory based on a destination address. Basu fails to teach searching for a shortest path. Nakamichi further teaches these limitations.

Nakamichi further teaches in paragraph [0050], sharing traffic information related to Open Shortest Path First (OSPF) protocol (searching for a shortest path). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Nakamichi with the invention of Basu since Nakamichi provides a system where link states and opaque LSAs are stored in databases for use in an environment implementing the OSPF protocol, and such databases for OSPF can be used in the system of Basu to populate and update routing tables and allow the system of Basu to be compatible with and to be enhanced with OSPF technologies and operate in OSPF environments and networks.

In regards to Claim 10, as discussed in the rejection of Claim 6, Basu teaches a function determining a next hop to which an arrived packet is to be sent. Basu fails to teach searching for a shortest path. Nakamichi further teaches these limitations.

Nakamichi further teaches in paragraph [0050], sharing traffic information related to Open Shortest Path First (OSPF) protocol (searching for a shortest path). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Nakamichi with the invention of Basu since Nakamichi

provides a system where link states and opaque LSAs are stored in databases for use in an environment implementing the OSPF protocol, and such databases for OSPF can be used in the system of Basu to populate and update routing tables and allow the system of Basu to be compatible with and to be enhanced with OSPF technologies and operate in OSPF environments and networks.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basu in view of Nakamichi, Hassell, and further in view of Dobbins et al. (Patent Number: 5,825,772), hereafter referred to as Dobbins.

In regards to Claims 21 and 22, as discussed in the rejections of Claims 1 and 6, Basu in view of Nakamichi and Hassell teaches a routing table generating unit, and a TCAM and an external memory storing respective information. Basu fails to teach storing an LS type, a link state ID, an advertising router, an LS sequence number, a link ID, link data and metric. Dobbins teaches these limitations.

In the same field of endeavor, Dobbins teaches in column 3, lines 43-53, column 13, lines 50-54, column 14, lines 47-53, column 15, lines 19-38 and 46-51, and column 24, lines 13-15, an LS type, link state ID, an advertising switch and IP routers advertising, an LS sequence number, a link ID, link data, and metrics. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Dobbins with the invention of Basu since Dobbins provides a system in which link state changes of a network topology are efficiently exchanged between network nodes and involves spanning trees, which can be introduced into the system of

Basu to allow accurate and timely updating of memory entries concerning trees and subtrees in the system of Basu.

Response to Arguments

I. Arguments for Claim Rejection Under 35 USC § 101

Applicant's arguments, see page 11 of 14, filed 05/27/2008, with respect to Claims 16-11 and 16-20 have been fully considered and are persuasive. The rejection of Claims 6-11 and 16-20 has been withdrawn.

II. Arguments for Claim Rejection Under 35 USC § 102

Applicants' arguments filed 05/27/2008 have been fully considered but they are not persuasive. Applicants submit that a problem in the Nakamichi reference, in which all operation are processed by a processing unit and that can be a large amount of processing load, and that, in accordance with a constitution of applicants' present application, it is possible to reduce processing load of a RS. Claim 12 does not contain limitations that clearly claim such an operation, and Claim 12 does not contain limitations that clearly distinguish Claim 12 from the system disclosed in the Nakamichi reference, as discussed in the rejection of Claim 12.

Applicants also submit that the Nakamichi reference does not teach or suggest determining whether newly received information is new or old as recited in Claim 12 of applicants' present invention. Examiner respectfully disagrees. As discussed in the rejection of Claim 12, Nakamichi teaches in paragraphs [0141] and [0142], and in FIG.

11, Sheet 11 of 12, in step item S110 (FIG. 11), it is determined if an opaque LSA in a OLDB structure is up-to-date, and if an opaque LSA is up-to-date, this up-to-date OLDB structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position, but if an opaque LSA is not up-to-date, the received opaque LSA is discarded (step item S112, FIG. 11) and is not inserted into the database region. In the Nakamichi reference, “up-to-date" is substantively the same as “new” of applicant, and “not up-to-date” of the Nakamichi reference is substantively the same as “old” of applicant. As a result, in the Nakamichi reference, if an opaque LSA is up-to-date (“is **new**”), this up-to-date OLDB structure is exchanged for an old OLDB structure which has already existed in the database (step item S114, FIG. 11) and the OLDB structure with the up-to-date LSA is inserted into this position, but if an opaque LSA is not up-to-date (“is **old**”), the received opaque LSA is discarded (step item S112, FIG. 11) and is not inserted into the database region, clearly teaching that a determination is made if the received information is "new” (up-to-date) or “old” (not up-to-date). Claim 12 does not contain limitations that clearly distinguish Claim 12 from the system disclosed in the Nakamichi reference.

III. Arguments for Claim Rejection Under 35 USC § 103

Applicants’ arguments filed 05/27/2008 have been fully considered but they are not persuasive. Applicants submit that Basu fails to disclose storing a remained of items to an external memory. Examiner respectfully disagrees this is sufficient for the

withdrawal of the rejection of Claim 1. As discussed in the rejection of Claim 1, the Basu reference is applied to teach that a unit that stores an item that uniquely identifies information among classified items in a TCAM (a tree of a routing table is stored in a TCAM) and stores another item to an external memory, and the Nakamichi reference is applied since Nakamichi teaches in paragraphs [0054] and [0059], and in FIG. 3, Sheet 3 of 12, a link state database (a memory) that is a database defined by the OSPF protocol and stores link states (stores an item in a memory), and an opaque LSA database (an external memory) that is a database storing the opaque LSAs (the rest of the items). Claim 1 does not contain limitations that clearly distinguish Claim 1 from the teaching of Basu in view of Nakamichi and Hassell as applied in the rejection of Claim 1.

Applicants' other arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA SMITH whose telephone number is (571)270-1826. The examiner can normally be reached on Monday-Thursday 9:30am-7pm, Alternating Fridays 9:30am-6pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua Smith
Patent Examiner
25 August 2008

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2619